

**HIGH RESOLUTION IMAGING INSTRUMENT USING NON-UNIFORMLY  
ARRAYED SENSORS**

**Abstract of the Disclosure**

5       An imaging instrument includes plural spaced-apart photon collectors, whose sampled  
outputs are correlated in pairs to yield brightness line integrals across a remote object being  
imaged. These integrals can be subject to matrix decomposition to yield a 2D array of image  
data corresponding to the object. Another imaging instrument includes plural spaced-apart  
reflectors, each having an optical fiber end at its focal point. The precise positions of the optical  
10   fiber ends are controlled by a control system (e.g., including piezo-electric positioners) that can  
be operated to counter-act the effect of atmospheric turbulence. The other ends of the fibers  
terminate at an image plane and serve to provide an output image. The sensors may be arrayed in  
a non-uniform manner.